SONY

3-755-498-**21**(1)

Stereo Cassette Deck

Operating Instructions

TC-W32/~~W290~~

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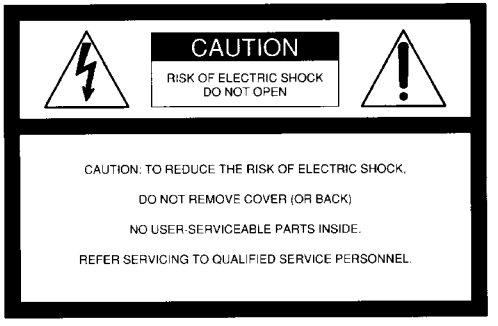
WARNING

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. _____ Serial No. _____

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

* The graphical symbols are on the rear enclosure.

INFORMATION

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

— Reorient or relocate the receiving antenna.
— Increase the separation between the equipment and receiver.
— Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
— Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

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Features

For higher quality recording/playback
- **B and C type Dolby NR* systems** which reduce tape noise.

For your convenience
- **Automatic tape type detection** during playback and recording.
- **A relay function** for long playback.
- **Synchronized dubbing** at normal or high speed.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Precautions

On safety

- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- The unit is not disconnected from the ac power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

On operation

- When the unit is not used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if a cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The head and tape path should be cleaned after every ten hours of operation. Dirty heads and a dirty tape path may cause:

— loss of high-frequency response
— loss of sound volume
— sound drop-out

If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

For the customers in the U. S. A.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

Unpacking

Checking the Supplied Accessories

Make sure that the following supplied accessories are included with your unit.

- Audio connecting cords (2)

Notes on Installation

- Place the unit with the front panel facing you in a location with adequate air circulation to prevent overheating of the unit.
- Do not place the unit:
  — near heat sources such as radiators or air ducts.
  — in places subject to direct sunlight, excessive dust, mechanical vibration or shock.
  — in an inclined position.
  — on a rug or other soft surfaces that would block the ventilation holes on the bottom of the unit.

Do not throw away the carton and the packing material

They will come in handy when transporting the unit or shipping it for servicing.

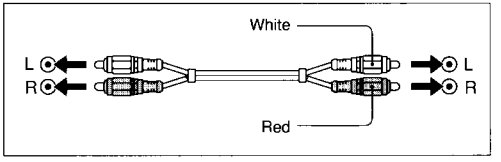
Checking the Operating Voltage

- Operate the unit only on 120 V AC, 60 Hz (U.S.A. model) or 240 V AC, 50 Hz (Australia model).
- Before operating the unit, be sure that the operating voltage of your unit is identical with that of your local power supply.

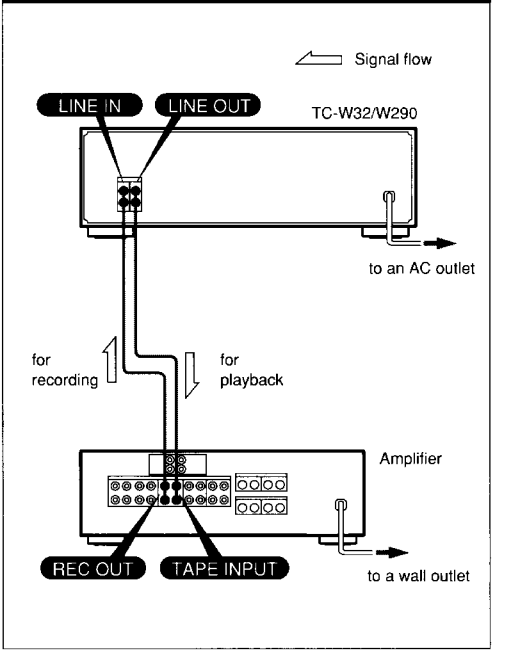
Hooking Up the System

Before You Begin

- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.
- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pickup.

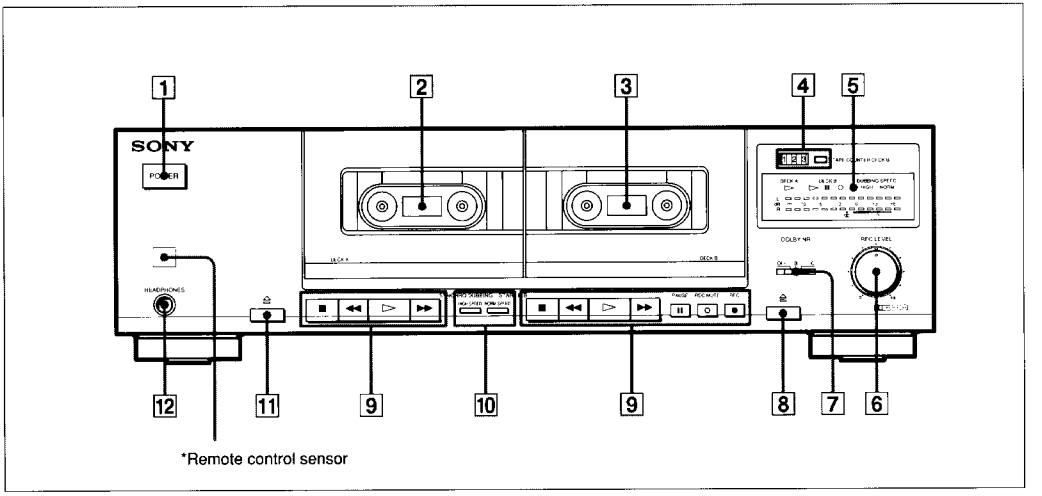


Hook-up Example



Identifying the Parts

Front Panel



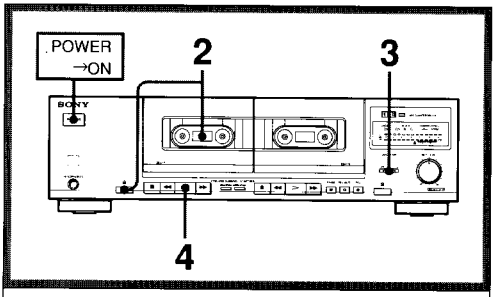
For details, refer to the page number indicated in parenthesis.

1 **POWER switch**
2 **Deck A**
3 **Deck B**
4 **TAPE COUNTER and reset button (deck B)**
5 **Display panel**
6 **REC (recording) LEVEL control (pages 9 and 10)**
7 **DOLBY NR (Dolby noise reduction) switch (pages 7 and 9)**
8 **⏏ (eject) button (deck B)**
9 **Tape operation buttons**
■ (stop) button
◀◀ (leftward fast winding) button
► (play) button
▶▶ (rightward fast winding) button
II PAUSE button (deck B only)
O REC MUTE (record muting) button (deck B only) (page 11)
● REC (recording) button (deck B only)
10 **SYNCHRO DUBBING buttons (page 12)**
HIGH SPEED button
NORM (normal) SPEED button
11 **⏏ (eject) button (deck A)**
12 **HEADPHONES jack (stereo phone jack)**

***Remote control sensor**
You can remotely control this cassette deck with:
— A remote commander that came with a Sony amplifier or receiver if it has the **R** mark and cassette deck control capability.
— Any optional Sony remote commander with the **R** mark and cassette deck control capability.

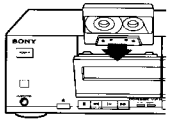
Playing Back

Follow the procedure below to play back a cassette on deck A or B.

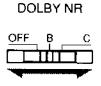


1 **Turn on the amplifier and select the tape function.**

2 **Insert a cassette.**



3 **Set DOLBY NR to the same position that was used when the cassette was recorded.**



4 **Press ► to start playback.**

To stop playback, press the ■ button.
To stop playback momentarily, press the ❚❚ button (only on deck B).
To restart play, press the ❚❚ or ► button.
To fastwind a tape rightward, press the ►► button.
To fastwind a tape leftward, press the ◄◄ button.

Is it necessary to set the tape type being used?
No. The deck has an automatic tape type detection system.

To change to recording mode during playback
Keeping the ► button pressed, press the ● button.
The unit immediately switches from playback to recording without stopping the tape. This is useful when editing previously recorded material.

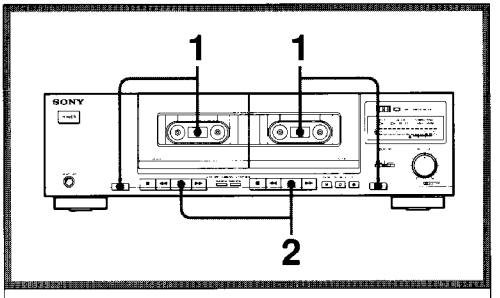
When decks A and B are in playback mode
Only playback from deck A will be audible. However, a short break in sound output will occur after the activation of the second deck.

What is the Dolby NR system?
The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals by boosting the signals during recording and lowering them during playback.

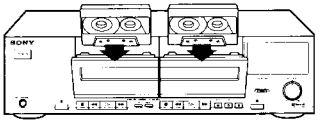
Before pulling out the power cord
Be sure to stop playback, recording or dubbing by pressing the ■ button. Otherwise, the ⏏ button does not function and the tape may be damaged.

Playing Back Both Decks in Succession — Relay Play

The Relay Play function plays back cassettes in deck A and deck B continuously and in consecutive order.



1 **Insert cassettes into both decks.**

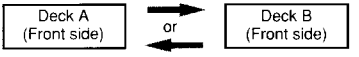


2 **Press ► to start playback of the cassette to be listened to first.**

To stop relay play
Press the ■ button of the deck playing.

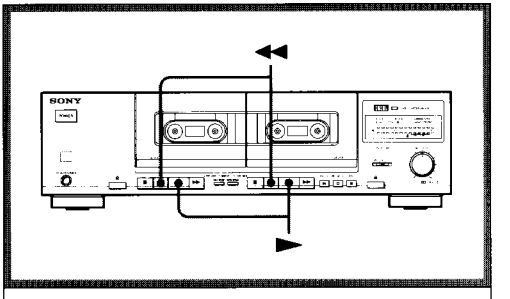
Note on the Relay Play function
Tapes that have ended must be rewound, turned over or replaced with another tape to enable the continuation of the Relay Play function.

Playback sequence of Relay Play
Relay Play always follows the sequence below regardless of where playback starts.

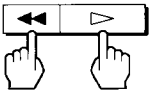


Playing Back Automatically After Rewinding — Auto Play

The Auto Play function automatically starts playing back a cassette after fast winding it to the beginning.



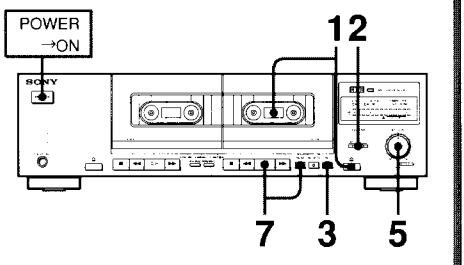
While pressing ►, press ◄◄.



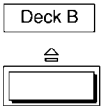
From the beginning of...	While pressing...
front side	►, press ◄◄.

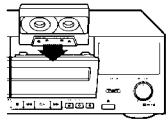
Recording (Only on Deck B)

Follow this procedure to record a source on a cassette (deck B only).



1 **Insert a cassette into deck B.**

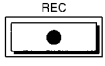




2 **Set DOLBY NR.**

3 **Press ● to enter recording pause mode.**

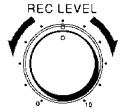
Note
If the tab has been removed from either side A or B, recording is impossible on the side(s).
To record a cassette for recording, cover the respective slot with tape. See "To Protect a Recording" on page 10.



4 **Play the program source to be recorded.**

5 **Turn REC LEVEL to adjust the recording level.**

See "Adjusting the Recording Level" on page 10.



6 **Restart the program source, if required.**

7 **Press ► or ❚❚ to start recording.**

To stop recording
Press the ■ button.

When deck B is in recording or recording pause mode
All buttons on deck A are disabled.
Pressing any button on deck A causes the recording indicator on deck B to flash.

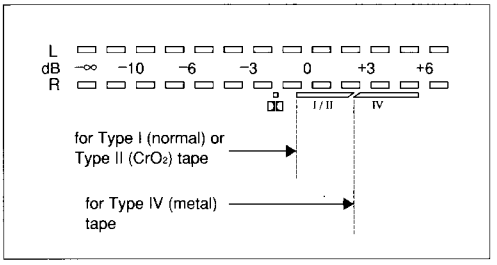
When pressing the ● button on deck B during playback on deck A
Deck A stops and deck B enters recording pause mode.

Recording (Only on Deck B)

Adjusting the Recording Level

The optimum recording level, which differs according to the tape type, is indicated on the PEAK LEVEL METER for each tape type.
Adjust the REC LEVEL control as high as possible without exceeding the recommended range for the tape type being used.

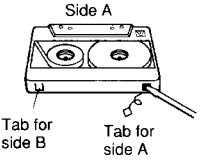
PEAK LEVEL METER readings by tape type
Recommended maximum PEAK LEVEL METER readings.



Tips on recording level adjustment
- If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound. Therefore, the recording level should be set as high as possible without causing distortion.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

To Protect a Recording

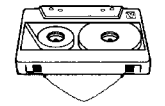
To protect a recording on side A or B
Break out the respective tab.



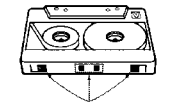
To recover a cassette for recording
Cover the respective slot with tape.

When using Type II (CrO_2) or Type IV (metal) cassettes
Be careful not to cover the detector slots which are necessary for automatic tape type detection.

Type II (CrO_2) cassette and its detector slots



Type IV (metal) cassette and its detector slots

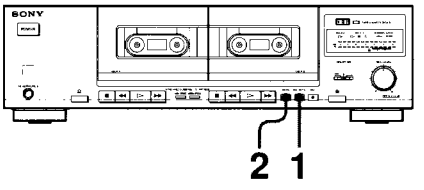


Cassette Care
- Avoid touching the tape surface of a cassette to prevent contamination of the heads by dirt, dust, or oil on the skin.
- Keep cassettes away from equipment with magnets, such as speakers and amplifiers, as erasure or distortion of the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.

Note on cassettes longer than 90 minutes
The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

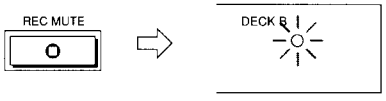
Inserting a Blank Space during Recording — Record Muting

The Record Muting function allows you to insert a four-second blank to replace unwanted input with a blank of any desired length.

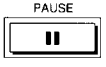


1 While recording, press O and release it immediately.

The recording indicator for deck B starts to flash. During this time, no incoming signals are recorded on the tape.
After four seconds, the II indicator lights up and the unit enters recording pause mode.



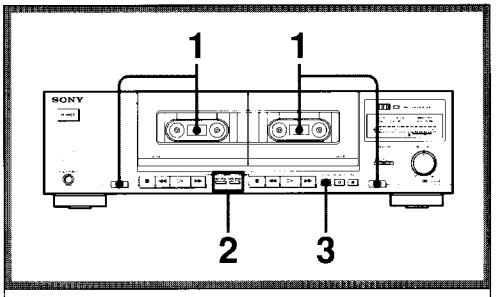
2 Press II to resume recording.



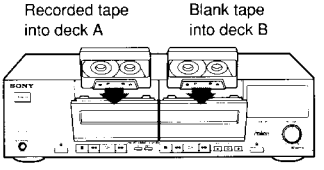
To create a blank longer than four seconds
Press the O button for the desired length of time. After four seconds, the recording indicator for deck B flashes with greater rapidity. When you release the O button, the II indicator lights up and the unit goes into recording pause mode.
Press the II button to resume recording.

Dubbing a Tape

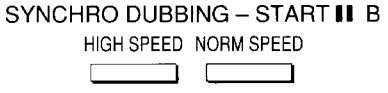
Use the dubbing function to copy a tape in deck A to a tape in deck B. High speed dubbing is convenient for dubbing entire tapes while normal-speed dubbing is handy for tape editing.



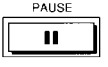
1 Insert cassettes into both tape decks.



2 Press HIGH SPEED or NORM SPEED to select the dubbing speed.



3 Press ▮▮ on deck B to start dubbing.



To stop dubbing
During normal-speed dubbing, press the ■ button on deck B.
During high-speed dubbing, press the ■ button on either deck A or B.

During high-speed dubbing
Only the ■ button is operative.

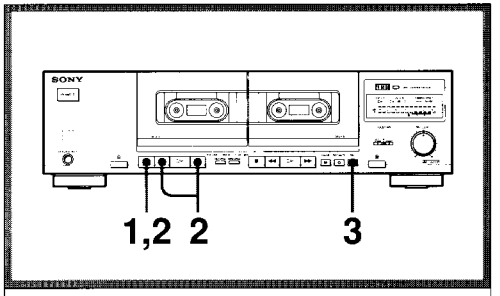
If the NORM or HIGH indicator flashes three times
Either one or both tabs of the cassette inserted into deck B have been removed, making dubbing impossible for that side. Cover the slot(s) with tape (see page 10).

Is it necessary to adjust the recording level and select the Dolby NR system?
It is unnecessary since the tape in deck B is automatically recorded with the same recording level and Dolby noise reduction system as the original in deck A.
The Dolby system must, however, be set to match the tape in deck A when the sound is monitored during normal-speed dubbing.

Notes on tape dubbing
- Do not change the dubbing speed setting during tape dubbing.
- If the sound is affected by the proximity of a television set during high-speed dubbing, turn the television set off or move it away from the deck.

Dubbing Only Desired Portions

Follow this procedure to dub only desired portions of selections. Note that this is only possible in the normal-speed dubbing mode.



1 **Press ■ on deck A at the start of a selection to be skipped:**

Deck A enters the stop mode and deck B enters the recording pause mode.

■

2 **Locate the desired portion on deck A.**

◄◄ or ►►

⇩

■

3 **Press II on deck B to resume dubbing.**

PAUSE

II

Maintenance

Cleaning the Heads and Tape Path

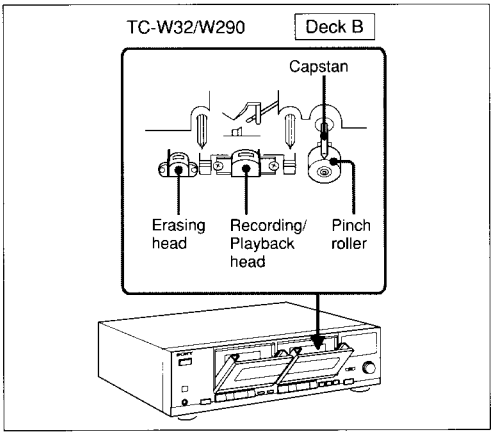
Clean all surfaces over which the tape travels after every ten hours of operation to guard against:
— low-quality sound
— a decrease in sound level
— excessive wow, flutter or drop-out
— incomplete erasure
— impairment of recording function

To obtain high-quality recorded sound, cleaning before every recording is recommended.

1 Press ⏏ to open the cassette holder. Grasp the front holder on both sides and gently lift to remove it.

2 With the unit turned off, wipe the heads, the pinch rollers and the capstans with a cotton swab slightly moistened with alcohol or a commercially available cleaning fluid for tape decks.

3 Replace the cassette holder.



Do not insert a cassette until the cleaned areas are completely dry.

Demagnetizing the Heads

After 20 to 30 hours of use, or when you notice hiss and/or loss of high frequencies, the residual magnetism built up on the heads should be removed.

1 Turn off the power.

2 Demagnetize the heads with any commercially available demagnetizer.
Refer to the instruction manual of the demagnetizer for detailed instructions.

Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution.
Do not use any type of abrasive pad, scouring powder or solvents such as alcohol or benzine.

Specifications

Recording system 4-track 2-channel stereo
Fast winding time Approx. 120 sec. (with Sony C-60 cassette)
Bias AC bias
Signal-to-noise ratio (at peak level)

Cassette (Dolby NR OFF)	Type IV (Sony Metal-Select/S)	Type II (Sony UX-S)	Type I (Sony HF-S)
	58 dB	57 dB	55 dB

Measured at peak level weighted without NR. The S/N is improved by about 15 dB at 500 Hz and by about 20 dB about 1 kHz with Dolby-C NR on, and by 5 dB at 1 kHz and by 10 dB about 5 kHz with Dolby-B NR on.

Harmonic distortion
0.4% (with Sony Type I, 160 nWb/m, 315 Hz, 3rd H.D.)
1.8% (with Sony Type IV, 250 nWb/m, 315 Hz, 3rd H.D.)

Frequency response (Dolby NR OFF)

Type IV cassette (Sony Metal-Select/S)	30 - 15,000 Hz (±3 dB,IEC) 30 - 13,000 Hz [±3 dB (-4dB recording)]
Type II cassette (Sony UX-S)	30 - 14,000 Hz (±3 dB,IEC)
Type I cassette (Sony HF-S)	30 - 13,000 Hz (±3 dB,IEC)

Wow and flutter ±0.15% W.Peak (IEC)
0.1% W.RMS (NAB)
±0.2% W.Peak (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	0.16 V
	Input impedance	47 kilohms

Outputs

Line outputs (phono jacks)	Rated output level	0.5 V at a load impedance of 47 kilohms
	Load impedance	Over 10 kilohms
Headphones (stereo phone jack)	Output level	1 mW at a load impedance of 32 ohms

General

Power requirements Model for U.S.A.:
120 V AC, 60 Hz
Model for the Australia:
240 V AC (or 220 V AC adjustable by Sony personnel), 50/60 Hz
Power consumption 15 W

Dimensions Approx. 430 × 123 × 290 mm (w/h/d) (17 × 4 7/8 × 11 1/4 inches) including projecting parts and controls
Weight Approx. 3.8 kg (8 lbs 6 oz)

Supplied accessories
Audio connecting cords (2)

Design and specifications are subject to change without notice.

Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.

Before proceeding with these trouble checks, verify that:
- The power cord is firmly connected.
- Amplifier connections are firmly made.
- Heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are set correctly.

Function Buttons and Tape Transport Problems

Symptom	Cause	Remedy
The function buttons do not activate.	The cassette holder is not fully closed.	Close the holder completely.
	The cassette is not properly inserted.	Insert cassette correctly.
	Button was pressed immediately after power was turned on.	Wait until the ▮▮ indicator stops flashing.
The ● button does not activate.	There is no cassette in the holder.	Insert a cassette.
	A tab has been removed from the cassette.	Cover the slot with tape (page 10).
Automatic shut-off mechanism activates before the tape comes to its end.	The tape is slack.	Take up the tape slack.
	The cassette shell is deformed.	Use another cassette.
Excessively loud tape transport noise during fast winding.	This noise is caused by the cassette and does not signify a mechanical problem.	—
The ⏏ button does not function.	There has been a power failure or the power cord has been disconnected.	Reconnect the power.

Recording and Playback Problems

Symptom	Cause	Remedy
Recording or playback cannot be made or there is a decrease in sound level.	The recording/playback and erasing heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection.	Make connections properly (page 5).
	Improper setting of the amplifier controls.	Set the amplifier controls to the appropriate positions
Excessive wow, flutter or dropout.	The head, capstan or pinch roller is dirty.	Clean in accordance with instructions (page 14).
Incomplete erasure.	The erasing head is dirty.	Clean the erasing head.
Increased noise or poor reproduction in high frequencies.	The head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies.	Improper setting of the DOLBY NR switch.	During playing back,set the switch to the same position used in recording.
	The unit is placed near a television set.	Move the deck away from the television set.
A break in sound output occurs when a second deck is activated.	This does not signify a mechanical problem. Sound output from deck A will occur shortly after.	—

Noise

Symptom	Cause	Remedy
Hum noise.	The unit is stacked on or under the amplifier.	Separate the unit.
Noise is recorded.	The recording was made near equipment such as a television set or a color monitor, and interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from the television set or color monitor.